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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,995	07/09/2001	Didier Branellec	ST98032	1245

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EXAMINER	
MARVICH, MARIA	

ART UNIT	PAPER NUMBER
1636	11

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.	Applicant(s)
09/787,995	BRANELLEC ET AL.
Examiner	**Art Unit**
Maria B Marvich, PhD	1636

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2001* is/are a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *8*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other

DETAILED ACTION

Drawings

Formal drawings have been submitted which fail to comply with 37 CFR 1.84. Please see the enclosed PTO-948.

Specification

A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Objections

Claim 16 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim multiply dependent claims cannot depend from another multiply dependent claim. See MPEP § 608.01(n). Accordingly, the claim 16 has not been further treated on the merits.

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 8, 10-12, 14, 17 and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Schwartz et al., (WO 93/09236, applicant cited).

Schwartz et al. teach a myogenic vector system (MVS) that is comprised of a promoter active in skeletal, heart and smooth muscle cells (page 9, line 9-12). The promoter can be skeletal a-actin with a variety of other sequences (a 5'mRNA leader sequence, an intron, an ATG initiation codon, an NcoI restriction site, 3' untranslated regions) (page 10,line 3-12). In the broadest reading of the claimed invention, the MVS contains part of an enhancer and part of a promoter specific in muscle and even part of SMact or SM22, said part can mean as little as one nucleotide. As well, Schwartz envisions use of a regulator system of which any of a variety of regulators can be used. Two different regulatory sequences are a preferred embodiment of the invention (page 10, line 23-26). In this embodiment, two functional units are linked together one with a myogenic specific promoter and the second with a response element corresponding to a receptor (page 11, line 1-9). Again this can represent parts of contains part of an enhancer and part of a promoter specific in muscle and even part of SMact or SM22.

The MVS also includes coding sequences for a variety of other proteins such as growth factors and these are all contained in a cassette (page 12, line 8-18). The MVSs are modified to enhance uptake by the cell (page 13, line 26-28).

Claims 1-6, 8, 10-12, 14, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Coleman et al. (WO/ 98/24922, applicant cited).

Coleman et al. teach the vectors for stable expression of IGF-1 which includes sequences necessary for expression of a nucleic acid cassette (abstract). The vector contains 5'flanking

regions for regulated expression of IGF-1. Muscle cells for expression include smooth muscle (page 14, line 28-33). Promoters include myogenic-specific promoters such as skeletal a-actin and non-specific promoters such as CMS-IE and RSV-LTR. Furthermore, a promoter may be used by itself or in combination with elements from other promoters as well as enhancers (page 10, line 23-36). And, the 5'flanking region can include a promoter sequence which may b linked to other 5'UTR sequences (page 15, line 10-14).

Two functional units are envisioned in the invention that are linked together one with a myogenic specific promoter and the second with a response element corresponding to a receptor driving expression of a therapeutic protein or RNA (page 17, line 18-24). For delivery of the vector, biochemical transfer agents are envisioned that includes PVP (page 23, line 6-13) and lipids, proteins or carbohydrates (page 23, line 22 to page 24, line 4) for the enhancement of uptake of the vector. Myogenic cell cultures were transfected with the vector of the invention (page 52, line 1-8).

Claims 1-11,15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Leiden et al, US 6,297,220 (Oct. 2, 2001 filed Nov 18, 1997).

Leiden et al teach a recombinant adenovirus comprising a coding sequence under control of an enhancer-promoter. Preferred enhancer–promoter sequences are CMV, RSV, smooth muscle α-actin (column 3, line 14-24). The coding sequence is operatively linked to a transcription termination region (column 3, line 24-28) and the adenovirus is typically delivered as a pharmaceutical composition with a physiologically acceptable carrier (column 3, line 44-

48). A coding sequence can include any gene product but some preferred embodiments include growth factors which act as transcription factors, angiogenesis inducers etc column 6, line 17).

The enhancer-promoter is described as a composite units that contains both enhancer and promoter elements and is operatively linked to at least one gene product (column 6, line 40-44). In the invention, preferred smooth muscle promoters include endothelin or smooth muscle α-actin. As described in example 1, the β-gal gene cassette was inserted into AdCMV (column 11). A hybrid promoter can be read into the invention given the criteria that it is part of an enhancer and part of a promoter such that inclusions of the smooth muscle α-actin promoter in the construct within the adenoviral genome ensure that adenoviral enhancers will be present and thus create an enhancer-promoter hybrid promoter. Given that the enhancer and promoter need be a part (a single nucleotide) of the sequences of for example CMV and SM22, then the invention of Leiden et al. can be read to comprise said sequences.

Claims 1-15, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Antleman et al, US 6,074,850 (Jun. 13, 2000 filed Feb 14, 1997).

Antelman et al. teach a viral vector system or plasmid into which an E2F-Rb fusion construct is inserted (column 8, line 54-64). The invention provides for administration which comprises a solution in an acceptable carrier which in the case of the plasmid DN A is a transfer agent such as liposome (column 10, line 35-64). A recombinant adenovirus expressing Rb (a tumor suppressor that functions as a transcription factor) under control o the smooth muscle α-actin promoter was constructed in example II (column 15-column 18). The vector contained the E1A enhancer followed by the human smooth muscle α-actin promoter and the E1b/proteinIX

poly A signal. Several cell lines such as the smooth muscle cell line A7R5 were infected with the virus. As well, rats were infected with the adenovirus in poloxamer 407. In a broader reading of the claims, that the enhancer and promoter need be a part of the sequences of for example CMV and SM22, then the invention of Antelman et al. can be read to comprise said sequences.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 and by dependency claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-18 begin with "the" or "a".

The term "strong" in claim 1 is a relative term that renders the claim indefinite. The term "strong" is a relative one not defined by the claim, no single set of conditions is recognized by the art as being "strong" and because the specification does not provide a standard for ascertaining the requisite degree, the metes and bounds of claim 1 and by dependency 3 and 4 cannot be established.

Claim 2 is indefinite in that it claims a hybrid promoter chosen from CMV-IE, RSV-LTR, the SV40 enhancer and the EF1a enhancer. It is not clear whether the promoter is all four

or one element chosen from the list. Claim 10 is indefinite for the same reason in that it claims a protein chosen from the proteins involved in cell cycle etc and the transcription factors.

Claims 17 and 18 provides for the use of hybrid promoters, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17 and 18 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 1-15, 17-18 are rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria B. Marvich, PhD whose telephone number is (703) 605-1207. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel, PhD can be reached on (703) 305-1998. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 305-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the patent analyst, Zeta Adams, whose telephone number is (703) 305-3291.

Maria B Marvich, PhD
Examiner
Art Unit 1636

December 23, 2002

DAVID G. ZOU
PRIMARY EXAMINER